

REMARKS

Claims 1-36 are pending in this application. By this Amendment, claims 1, 13-15 and 30 are amended. Support for the amendments to claims 1, 13-15 and 30 can be found at least at page 7, line 31 - page 8, line 2 of the specification. No new matter is added.

Claims 1 and 13 are rejected under 35 U.S.C. §103(a) over Erne (WO 03/104748, using corresponding U.S. Patent No. 7,259,842 as a translation); and claims 1-3, 6, 7, 10, 13-16, 18, 22, 24, 29 and 32 are rejected under 35 U.S.C. §102(b) over Kitajima (U.S. Patent No. 6,057,916). The rejections are respectfully traversed.

Erne and Kitajima do not teach every claimed feature of independent claims 1 and 13. Erne and Kitajima do not teach "wherein the radiation source and the detector are arranged so that a wavefront of the radiation is focused indirectly or directly, in reflection and/or transmission, onto the detector by at least a part of the medium; wherein the detector has a wavefront sensor or the detector is a wavefront sensor," as recited in independent claim 1; and "focusing of the wavefront of the radiation onto the detector; recording of the signals of the detector; and evaluating of the signals and determining of the inclination of the device; wherein during the evaluating of the signals, information about the wavefront is derived," as recited in independent claim 13 (emphasis added).

Regarding claim 1, the Office Action asserts that camera 9 of Fig. 1 of Erne corresponds to the claimed wavefront sensor (see Office Action, page 2). In particular, the Office Action appears to be interpreting the claimed "wavefront" as waves on a liquid surface. However, the term "wavefront sensor" is known differently in the art (see en.wikipedia.org/wiki/Wavefront_sensor - "A wavefront sensor is a device for measuring the aberrations of an optical wavefront. Although an amplitude splitting interferometer such as the Michelson interferometer could be called a wavefront sensor, the term is normally applied to instruments that do not require an unaberrated reference beam to interfere with. They are

commonly used in adaptive optics systems, lens testing and increasingly in ophthalmology" (emphasis added)).

The present disclosure discusses specific forms of wavefront sensors, for example, a Shack-Hartmann type wavefront sensor (see e.g. Figs. 3a and 3b). Further, "[a] Hartmann-Shack or Shack-Hartmann is a type of wavefront sensor. It is commonly used in adaptive optics systems. It consists of an array of lenses (called lenslets) of the same focal length. Each is focused onto a photon sensor (typically a CCD array or quad-cell). The local tilt of the wavefront across each lens can then be calculated from the position of the focal spot on the sensor. Any phase aberration can be approximated to a set of discrete tilts. By sampling an array of lenslets all of these tilts can be measured and the whole wavefront approximated" (see en.wikipedia.org/wiki/Shack-Hartmann).

In contrast, Erne merely discloses a camera 9 used for capturing images of the liquid's surface. Although a camera may be combined with lenslets to form a wavefront sensor, the plurality of lenslets are required before a wavefront sensor may be achieved, and thus Erne does not teach the wavefront sensor of independent claim 1. Further, the camera is not capable of sensing "the optical wavefront of the radiation [generated by the generating source]," as now recited in independent claim 1, because the camera 9 of Erne merely senses the waves on a liquid surface (see Abstract of Erne).

Regarding claim 13, the Office Action asserts that the quadrant light-receiving element 40 of Kitajima corresponds to the claimed wavefront detector of independent claim 13 (see Office Action, page 3). However, Kitajima merely discloses a quadrant sensor, not a wavefront detector/sensor, and the disclosed quadrant sensor is incapable of sensing a "wavefront of the radiation [generated by the radiation source]," as now recited in independent claim 13. Therefore, for similar reasons, Kitajima does not teach "focusing of the wavefront of the radiation onto the detector; recording of the signals of the [wavefront]

detector; and evaluating of the signals and determining of the inclination of the device; wherein during the evaluating of the signals, information about the wavefront is derived," as recited in independent claim 13 (emphasis added).

Therefore, for at least these reasons, independent claims 1 and 13 are patentable over Erne and Kitajima. Claims 2, 3, 6, 7, 10, 24-16, 18, 22, 24, 29 and 32, which variously depend from independent claims 1 and 13, are also patentable for at least their dependency on independent claims 1 and 13, as well as for the additional features they recite. Applicants thus respectfully request withdrawal of the rejections.

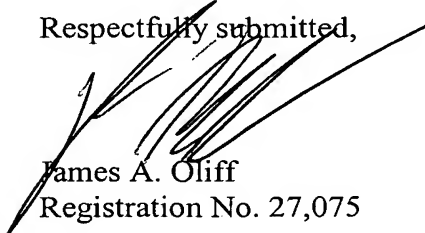
Claims 4, 20, 21, 23, 31 and 35 are rejected under 35 U.S.C. §103(a) over Kitajima in view of Yertoprakhov (U.S. Patent No. 6,476,943); claims 8, 9 and 25 are rejected under 35 U.S.C. §103(a) over Kitajima in view of Neal et al. (U.S. Patent No. 6,184,974); claims 11 and 26 are rejected under 35 U.S.C. §103(a) over Kitajima in view of Kaplan (U.S. Patent No. 4,290,043); claims 12, 27 and 28 are rejected under 35 U.S.C. §103(a) over Kitajima in view of Shirai et al. (U.S. Patent Application Publication No. 2001/0024270); claims 17 and 33 are rejected under 35 U.S.C. §103(a) over Kitajima in view of Hirohara et al. (U.S. Patent Application Publication No. 2003/0011757); and claim 19 is rejected under 35 U.S.C. §103(a) over Kitajima. The rejections are respectfully traversed.

Yertoprakhov, Neal, Kablan, Shira and Hirohara do not remedy the above-described deficiencies of Erne and Kitajima. Further, claims 4, 8, 9, 11, 12, 17, 19-21, 23, 25, 26-28, 31, 33 and 35 variously depend from independent claims 1 and 13. Therefore, claims 4, 8, 9, 11, 12, 17, 19-21, 23, 25, 26-28, 31, 33 and 35 are patentable for at least their dependency on independent claims 1 and 13, as well as for the additional features they recite. Applicants thus respectfully request withdrawal of the rejections.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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Attachments:

Request for Continued Examination (RCE)
Petition for Extension of Time

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